

HARVEIAN ORATION
EXPERIMENTAL PSYCHOLOGY
AND
HYPNOTISM

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The Harveian Oration
On Experimental Psychology
and Hypnotism

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS
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BY

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EXPERIMENTAL PSYCHOLOGY AND HYPNOTISM

MR. PRESIDENT, FELLOWS, AND GENTLEMEN,

When asked to deliver the Harveian Oration, I felt very keenly that the duty was an onerous yet a very honourable one. Often as I have been present at Harveian Orations, I can truly say that I never dreamt that the honour of giving one would fall upon me. I know my difficulties better than any one here, but I will do my best to forge one more link in the chain which connects us with Harvey and his work. It seems to be taken for granted that we all of us know all that there is to be known about Harvey, and yet when I began to formulate my ideas for this address, I found myself profoundly ignorant of the man and his real life-work, and I suppose I may take it for granted that the majority here are much in the same position. That Harvey lived during the disturbed times of Charles I and Cromwell, and that he first recognized the truth about the circulation of the blood one knew, but how little more! I shall, therefore, though I have nothing really new to add to the story of Harvey, consider the man and his times before proceeding to other matters which may be taken to represent his injunction that one must seek for truth by honest and unbiased research. Each of us, in relationship to great men, has his own special standpoint; and perhaps I may be allowed to compare such relationship to the beams of light which may be seen passing over the sea on a moonlight night. Each one seems to have a special line of light coming directly to him. So it is with men like Harvey; each of us who

has a life's work of a scientific kind sees emanating from him lines of light which are perhaps not conspicuous to others. I shall not in my oration attempt to trace, as has so often been done by my predecessors, the natural evolution of Harvey's discovery. The time was ripe for the discovery, and there were many who had very nearly reached the goal. But none had really established the facts, and no one had been able to bring the test of examination to the justification of his belief. I shall rather compare Harvey with a few of his contemporaries who had not any of his special gifts. Thus one will be able to see how different Harvey was from his surroundings; that he appeared, as it were, almost as a comet; unexpected and brilliant, and unlike other stars in the firmament.

The life of Harvey, extending as it did from the sixteenth well into the second half of the seventeenth century, covered a period in which most of the brilliant men of the time of Elizabeth were still living, and there were many others of distinction in almost every walk of life.

A time of unrest—social, moral, and political—seems after all to be likely to beget individual power of all kinds.

First let us consider Harvey's own professional work. We know the intimate connexion which from the earliest times existed between religion and the medical profession. In Egypt, Greece, and Rome the temples were the hospitals and the schools of medicine. Similar relationship existed during the Middle Ages, and in Harvey's time the medical profession was only just acquiring independence. A medical book was written by Andrew Boorde (1490-1549), who has been described by Professor Osler as the only priest-physician who wrote books on medicine. His books are full of medical interest, and give details of his travels in foreign parts, including Italy. His *materia medica* shows that the use of old and filthy animal matter was common. Much

good advice is given, to which I shall refer later when speaking about the treatment of insanity, but this doctor-priest gave good advice which he did not follow, and he died an outcast from both professions.

This connexion between religion and medicine led naturally to a spiritual interpretation of many of the human ailments.¹

The belief in Witchcraft was strong, and both Sir Thomas Browne (1605-1682) and Harvey were concerned in trials of witches, Harvey taking the more lenient view of the matter. Robert Burton (1577-1640), writing at this time, says: 'It is a common practice of some men to go first to the witch and then to the physician.' Paracelsus (1493-1541) says of the patient: 'It matters not whether it be God or the devil, angels or unclean spirits cure him, so that he be cured.' Burton, who is so eminently judicial in most of his writings that one fails to know his own opinion, writes: 'That which they can do is as much almost as the devil himself.'

James I was a strong believer in witchcraft and possession by the devil, and wrote a book on the subject.

The Church found it necessary (canon 72) to forbid without special licence the casting out of spirits in consequence of the many unauthorized exorcists.

Dr. Cotta (1616) recognizes diabolical intervention in disease when there are preternatural appearances or when remedies are inefficacious.

He describes possessed patients as vomiting nails, needles, &c., as being clairvoyant, and as being able to speak languages which they did not normally understand. 'It is the devil by his several languages,' he says.

In 1599 Bishop Hasnet describes the proceedings of Roman Catholic exorcists in the reign of Queen Elizabeth:—

'Ere long Maister Edmunds beginneth again his exorcisms, wherein he had not proceeded far but up cometh another spirit singing most filthy and bawdy songs; every word almost that he spoke was nothing but ribaldry. They that were present with one voyce

¹ I have to thank the Rev. E. G. O'Donohue, Chaplain of Bethlem Royal Hospital, for very many references.

affirmed that devil to be the Author of Luxury. A sort of prayer-meeting was then held for the relief of the distressed youth. Whereupon the Spirit of Pride departed in the form of a Peacock, the Spirit of Sloth in the form of an Asse.'

In exorcism by a priest the patient had to be seated in a 'holy chair', specially blessed for the occasion, and had to take a pint of sack and salad oil. After this a pan of burning brimstone was held under his nose until his face was blackened by smoke. During this time the priests abused the devils in suitable language.

Another method of expelling the evil spirit was by the priest passing his consecrated hand progressively from one part of the body to another, thus driving him to the extremities and so away.

Many passages from Shakespeare, a contemporary of Harvey, illustrate the treatment of insanity by exorcism. In the *Comedy of Errors*, iv. 4:—

Luciana. Alas! how fiery and how sharp he looks!

Courtesan. Mark how he trembles in his ecstasy!

Dr. Pinch. Give me your hand and let me feel your pulse . . .

I charge thee, Satan, housed within this man,
To yield possession to my holy prayers.

The pulse was supposed to be arrested during possession.

Among the medical remedies of the time ambergris, amber, aloes, and cubebs made into pills were said to be excellent for weak brains; and the carrying of a lap-wing's heart, eye, or brain round the neck improved memory.

In Padua, just before Harvey's time, Victorius treated melancholia with purgative syrups, leeches applied to the anus, and scented bandages over the heart.

Wilhelm Rondelet, of Montpellier, recommended enemas, purges, blood-letting in the early stages, and afterwards cautery to the scalp.

Moss grown from scalp or skull of a thief was also made into an ointment.

Trephining was supposed to let out the evil spirit.

Georgius Horst, of Wittenberg, gave thick, black blood and a dry, rigid state of the brain as the causes of melancholia, and recommended blood-letting, purgatives, and emetics.

Helmont, about 1630, recommended sudden immersion—the so-called surprise bath.

Castration was suggested as a remedy by Arnold Weikard (1640).

Dr. Mayern (1573–1654) recommended a monthly excess of wine and food as a fine stimulant to the system. Raspings of human skull also for gout.

The herbalists of the time, represented by Gerard, were the teachers of botany and materia medica, and nothing is more interesting than the quaint advice given in their writings. They followed closely on the old classical teachers.

Though the natural sciences were very backward, astronomy and mathematics were advanced, and were represented by Newton and Halley, who predicted the coming of the comet in Harvey's time whose return is due very shortly. As might be expected, mathematics attracted Harvey, and even to the time of his death he is said to have continued this study.

General literature, which does not seem to have attracted Harvey, was very fully represented. In those days a change was passing over the stage, and plays of the historical type were taking the place of the morality plays, similar to *Everyman*, though these continued to be played in the provinces. The drama was represented by Shakespeare, Jonson, and Massinger, while among the diarists are the sylviculturist Evelyn and Pepys, whose unique diary will remain for all time an example of self-analysis. Bacon was a patient of Harvey's, who did not appreciate the philosophy of the great Chancellor; but I can only add the names of a few, such as George Herbert, Thomas Browne, Francis Quarles, Fuller, and Butler, who represent the afterglow of the Elizabethan times.

Though human anatomy was to a considerable extent known and taught, the credulity of those writing on natural history is well seen in the large volume published in Switzerland by Gesner, who describes the most wonderful animals which are half human and half

fish, and whales of such a gigantic size that sailors landed on them mistaking them for islands. It is of interest to note that Caius contributed to this book the articles on English dogs.

Separated from the Church, the rivalry between the different branches of the profession continued, so that in Harvey's time the Barber-Surgeons endeavoured to gain more liberty than was allowed them by the physicians, who in those days were looked upon as more important.

The Apothecaries' Society was founded, and had legal difficulty in gaining its freedom from the control of the Grocers' Company. The Barber-Surgeons, like the Physicians, had the right of having the bodies of some criminals for dissection, and both had to give a certain number of public demonstrations and dissections, and Pepys describes how he was present at one given by the Barber-Surgeons, there being a morning demonstration, a substantial dinner, and an afternoon dissection. In Harvey's time also lived Sir Kenelm Digby, whose sympathetic powder had such a wonderful reputation. I add some notes on this *cure*.

Sir K. Digby lived during the reigns of James I and Charles I, and was a gentleman received at Court. Mr. F. Howell, who wrote *Dendrologia*, was wounded in the hand while separating two duellists. One of the combatants bound up the wound with his garter, and took him home and sent for aid. The King, hearing of this, sent one of his own surgeons, but as the wound did not make satisfactory progress he applied to Sir Kenelm Digby, who inquired whether they possessed anything that had any of the blood on it. The garter was brought. Digby, first putting the powder of vitriol into water, then immersed the garter while the patient was talking in the corner of the room. He suddenly started, and when asked the reason declared he had lost all pain, that a pleasing kind of freshness, as it were a wet, cold napkin, had passed over the hand, and that the tormenting inflammation had vanished. He was then advised to lay aside plaisters, and keep the wound clean. After dinner

the garter was taken out of the basin and placed to dry before the fire. The patient's servant came rushing to Sir Kenelm Digby to say his master's hand was as bad as ever, whereupon the garter being replaced in the basin, in five or six days the wound was cicatrized. The secret was said to have been derived from a Carmelite friar. Later every barber professed the art.

Dryden, in his adaptation of *The Tempest* (v. 1), makes Ariel say:—

He must be dressed again as I have done it.

Anoint the sword which pierced him with weapon-salve,

And wrap it close from air

Till I have time to visit him again.

In the next scene we have Hippolito and Miranda.

Hip. O, my wound pains me.

Mir. I am come to ease you.
[*she unwraps the sword.*]

Hip. Alas! I feel the cold air come to me.

My wound shoots worse than ever.

[*she wipes and anoints the sword.*]

Mir. Does it still grieve you?

Hip. Now methinks there's something

Laid just upon it.

Mir. Do you find no ease?

Hip. Yes. Yes, upon the sudden all the pain
Is leaving me. Sweet Heaven, how I am eased!

Werenfels (1657-1740) wrote: 'If the superstitious be wounded, he applies salve not to the wound, but to the weapon by which he received it. By a new kind of art, he will transplant his disease like a scion and graft it into what tree he pleases.'

From Harvey's contemporaries I pass to Harvey himself, and I have nothing new to add in any way to what has been so often already said by others. He was the eldest of seven sons born to a worthy burgher of Folkestone; probably his mother, who was very highly esteemed by all her sons; was the source of their power. The sons seem all to have been successful men—five were merchants, and one was attached to the Court. William Harvey, born April 1, 1578, was at Kings'

School at Canterbury, whence he proceeded to Caius College, and there he had his first introduction to human anatomy, for that college had a right to the bodies of certain criminals for dissection. After taking his B.A. degree he went to Padua, which was the leading European school of anatomy. He there worked hard at what was to be his life's study, and was evidently a social success, as he belonged to the more exclusive of the 'universities' there. We have his diploma, and, though something has been made of the eulogistic terms in which the degree is given, one must remember that still in some Northern universities every doctor is styled 'ornatissimus vir'.

He was admitted to our college after having taken his M.D. at Cambridge; and he married in 1604. Of his wife little is known. She had no children; probably her life was, like that of most women of that time who belonged to the professional classes, devoted chiefly to household management. I have looked into several books of the period, and may refer to one called *The Queen-like Closet or Rich Cabinet*. This gives what might be called the whole duty of the housewife as consisting in making preserves, cordials, and simple medicines, and ends with what may be called a complete letter-writer, taking it for granted that the ladies needed help in such matters. The only special reference to her seems to be in regard to a favourite parrot, which from its loquacity was supposed to be male, but a post-mortem examination revealed an impacted egg, showing its sex.

We may conveniently deal with Harvey's professional life in two aspects: In the one he was the busy practitioner riding about with his footman to visit his many patients. He was surgeon, physician, obstetrician, and lecturer on anatomy. His life must have been a very full one. He served among the elect of the College of Physicians, and, as we all know, declined the presidentship on the ground of age. He discovered the circulation of the blood many years before he published the results of

his work, and it is said that the publication destroyed his practice. Beside his private duties, he was attached to the staff of St. Bartholomew's, and there he did much useful work in reorganizing the staff, as has been so well told by Dr. Moore.

The other side of his life is that connected with the Court; he was Physician Extraordinary to James I, and one thinks it was just as well that he had little to do with that monarch, for their views must have been opposed in most things. He was appointed physician to Charles I, and there was a very strong feeling of affection between the two. The king took personal interest in Harvey's work, and assisted him in many ways. Harvey followed the king to Scotland, and later was with him at Oxford, where he replaced for a time the Roundhead Warden of Merton, and during the tedious siege he occupied himself with his work on incubation—carried out in the Fellows' Room. With the fall and death of the king Harvey's real active practical life almost ended. He had kindly brothers always ready to receive him, and he had his work in connexion with generation to carry on.

The greatest sorrow of his life was the dispersal and probable destruction of his work on generation and on the development of embryos by the mob who invaded Whitehall on Charles I leaving London; and no one can tell what a set-back to the study of embryology has been the consequence.

He was a great sufferer from gout, and the description of his treatment of himself for this is certainly alarming: he is said to have put his gouty feet into a pail of cold water till he could stand the cold no longer, and then to have gone to the stove, and so to have dispelled the attack. He spent his later years more or less in quiet seclusion; and recently I went, under the conduct of Dr. R. Jones, to a house near Woodford in Essex, which, though altered since his time, in part remains as he left it. In this house there are the

portraits of his father and his brothers, and the family likeness is very striking.

As to his general character, one cannot fail to be struck with his power of earnest and continuous work under trying conditions, seeing that, in addition to the manifold and varied cares of a most busy life, he seems to have been regarded by the men of his own day as a crack-brain, or almost as a breaker of sacred idols. With all this he was very tolerant, even towards those who abused him. For example, when Riolanus wrote against him (1648), he, in reply, writing to one of his old friends, says: 'I cannot find it in my heart to say anything severe of Riolanus. I care not, however, to make any question here of the etymology of words, for I am not of the opinion that it is the province of philosophy to infer aught as to the works of Nature from the signification of words, or to cite anatomical disquisitions before the grammatical tribunal. You indeed counsel well when you say, only make sure of the thing, call it whatever you will.' The guiding principle of Harvey through all his life is well shown by some of his own expressions. Thus, to quote from Dr. Ent: 'Nature, however, is the best and most faithful interpreter of her own secrets. Our Harvey rather seems as though discovery were natural to him, a thing of ease and of course, a matter of ordinary business.' Again, 'Nature,' he says, 'lies so open and is so very easy of consultation; discovery being made by those following the traces of Nature with their own eyes, pursuing her through devious but most assured ways till they reached her in the citadel of truth. Nature is to be herself addressed; the paths she shows are to be boldly trodden, for thus, whilst we consult our proper senses, advancing from inferior to superior levels we shall penetrate at length into the heart of her mystery.' He was guided by such principles as that 'one ought neither to praise or dispraise other anatomists, and that disputation was waste of time'.

He was full of quaint wit and imagination, and he draws comparisons between the brain and a commander, the leader of an orchestra, and an architect. He could on occasion, however, use strong language, but this was generally rather against principles than against men.

He lived the later part of his life with his brothers, sometimes in the country, sometimes in London. It was said that he would be shut up in darkness for hours or even days together in contemplation, and at other times would spend much time in the open air, sometimes on the roof of the house. At all events, with advancing years and with recurring attacks of the gout he was disinclined to move much. The end, as described by Aubrey, may probably be taken as the truth. It is as follows: 'The manner of his dying was really and bona fide thus—namely, the morning of his death, about 10 o'clock, he went to speak, and found that he had the dead palsy in his tongue. Then he saw what was to become of him, and he knew there was no hope of his recovery, so presently sends for his young nephews to come to him, to whom he gives one his watch—it was a minute watch with which he made his experiments; to another another remembrance, &c.; made sign to his apothecary to let him bleed in the tongue, which did little or no good, and so he ended his days.'

It is, I know, presumption for one in my position to eulogize a man like Harvey; who, though the past had been preparing for his advent, was so far ahead of his time that he was not appreciated for a considerable period, albeit, unlike most prophets, recognized before his death. With his fiery nature, and his persistent love of truth, it is surprising that he was as tolerant as he was. Surrounded by political and religious unrest, he followed his pursuit of the light, having the true feeling of scientific inquisitiveness, but with little of the self-satisfaction so often met with in the purely scientific mind.

From this brief consideration of Harvey and his times I pass to what must be considered as the special part of my address. Each of my predecessors has dealt with his task from the point of view of some subject to which he has paid great attention, or to which his life's work has been devoted; naturally, therefore, I turn to the consideration of Insanity, its past and present treatment, and the prospect for the future.

Harvey, though recognizing the position of the brain in human physiology, does not seem to have been attracted by philosophy or mental diseases. He preferred to devote his energies to the more material side of anatomy. He recognized that little beyond words had resulted from the older methods of study, and he was intolerant of mere verbiage. Things, not words, were his object.

OLD BEDLAM.

Yet I cannot help thinking that he must have been brought into contact with the insane, and probably with old Bedlam, which, being in the city in Bishopsgate Without, was not far from his house and his work at St. Bartholomew's; and as the mastership of Bedlam was a royal preferment till it was handed over to the Corporation of London, it seems probable that he must have been brought into contact with it and its inmates.

And here I would briefly refer to the treatment of the insane before and during Harvey's day. Dr. Hack Tuke, in his *History of the Insane in England*, has traced the steady progress of the treatment of insanity. I have already pointed out that medicine and religion were connected, and, in considering insanity and its treatment, I am still more impressed by this connexion, which persisted much longer in the case of insanity than in other diseases. The mental and moral appearing closely allied, one is not surprised that mental disorder was treated by moral as well as physical means; and as moral treatment often involved punishment, so

the deranged were subjected to various forms of discipline. The influence of saints was considered of much value, and in Harvey's time St. Anthony had a great reputation in Padua; insane pilgrims in great numbers resorted to his shrine in that city, and must have attracted the notice of Harvey. In those days the visiting of shrines was a common prescription in cases of insanity, and one of the oldest in Europe still exists in Gheel, the City of the Simple, which is built round the tomb of St. Dymphna. In Perthshire St. Fillan's, and in Ireland Glen-na-Galt were popular; and in Cornwall Dr. Hack Tuke found a similar holy place. In our own day we have Lourdes, to which lunatics as well as other sufferers are taken. The methods of cure differed, for whereas in some cases submersion almost to drowning-point was tried, in others recourse was had to whippings, immersion, and binding for a night to a pillar near the church or well.

Rosalind, in *As You Like It*, speaks of a madman as deserving 'a dark house and a whip'; and in *Twelfth Night* Sir Toby Belch says: 'Come, we'll have him in a dark room and bound.' Andrew Boorde, who lived just before Harvey's time, had strong views as to the necessity of controlling the insane. He says, 'I do advertise every man which is mad or lunatic, fanatic or demoniac, to be kept in safe guard in some close house or chamber where there is little light and that he have a keeper which the madman do fear.' It is advised that all dangerous things, even a garter, should be removed, and that no pictures or the like should be there, lest they suggest delusions; that the patient, if a man, should be shaved once a month and have no wine or strong beer. He graphically describes how he saw a German lady treated by the priests, who adjured the devils to come out of her, and he says this was done, but the language of the devils was so bad that he dared not tarry lest they should enter into him.

The most interesting writer on insanity in Harvey's

time was Robert Burton, the author of the *Anatomy of Melancholy*, and I must refer rather more in detail to him and to his works.

He was a contemporary of Harvey, being born in 1576, and dying in 1630. After the preparatory school he went to Brasenose, Oxford (where his likeness adorns the hall), becoming later a Student of Christ Church. His education, like that of Harvey, was classical, but he never got beyond this. Like a Chinese scholar, he seemed almost incapable of thinking except in quotation from classical authors. His references are to books, and not to Nature. He was like the spider in Swift's *Battle of the Books*, evolving his web from his inside, and not like the bee gathering in sweetness and light. He recognized the importance of observation, for he writes : 'What can be more ignominious than for a man not to know the structure and composition of his own body?' Yet he either did not know of, or did not recognize, Harvey's work, but describes the blood, arteries, and heart after the older fashion of his day. He describes the blood as a hot temperate red humour prepared in the mesaraic veins and made of the most temperate parts of the chylus in the liver, whose office it is to nourish the whole body, to give it strength and colour, being dispersed by the veins through every part of the body, and from it spirits are first begotten in the heart, which afterwards by the arteries are communicated to other parts. He recognized, however, the relationship existing between mental work and general circulation.

Though only on the level of his time, and a victim of authorities, yet when considering insanity his views on the whole are advanced and sound. He refers chiefly to melancholia, but incidentally touches on various forms of mental disorder. He traces their origin, causes, and symptoms, and the treatment is humane. I find no reference to whippings or dark cells.

He gives a table which is eminently satisfactory. He considers methods of treatment which are legiti-

mate and others which are not. Among the latter he disallows charms, incantations, images, and spells. He doubts the efficacy of these means, and considers that even if useful they ought not to be used. He objects to the use of relics ; being a strong Protestant, he is in general opposition to anything which is connected with the Romish Church. He asks whether it is lawful in such cases to appeal to the saints or their relics, and he satisfies himself that it is not justifiable.

Among the lawful means he places first and as most important the physician, but it must be a physician who is believed in for his knowledge and honesty. This has a doubtful sound. He quaintly recommends the patient to be obedient and willing, and that he should not practise on himself. He goes fully into general treatment, advising air and exercise, and his recommendation as to diet, though differing from ours, yet seems sensible. He, after his manner, quotes without comment a recommendation to get drunk occasionally. When he comes to the treatment by drugs, not unnaturally he follows the ancients, and would have doubtless suggested visits to the Island of Hellebore. This drug and borage are commended specially, but there are many others referred to for special reasons. He says of borage and hellebore that they are sovereign plants to purge the veins of melancholy and clear the heart of those black fumes which make it smart. Probably the classic hellebore was not the drug so called now, as there is no drug bearing that name which has any reputation. When 'Master of Bedlam' I used the black hellebore for special cases, but with no good result.

He advises patients not to trust entirely in drugs, and not to trust in their physicians till they have proved them. He also advised what nowadays would be looked upon as psycho-therapeutics. He says every disease of the soul has a peculiar medicine in Scripture :

‘As mastication is with bread, meditation is with what we read.’ He warns man against quacks and their allies, and suggests that the Devil himself is at times an expert physician.

In Harvey’s time the word ‘Bethlem’ had already been corrupted into ‘Bedlam’. Originally founded by an alderman of the City of London in 1247 for the Order of St. Mary of Bethlem on the Wednesday after the Feast of St. Luke, it was seized by the Crown in 1375 as a foreign priory; the Master was appointed by the Crown till the time of Henry VIII. Stow in his *Survey of London*, 1598, mentions the fact of lunatics being sent to Bethlem, and he refers to it as having been done some time before (1402).

Sir John Gresham, of Exchange fame, when Lord Mayor, obtained from the King the patronage of St. Bartholomew’s and Bethlem, and in 1578 left money for ‘the poor diseased in their minds in Bethlem’. In 1632 there was an enlargement and improvement, but still it was a miserable place, with manacles, whippings, and dark cells.

In 1676 two statues were erected in front of Bethlem, one representing Furious Mania, the other Melancholia. The latter was said to be taken from the porter of Cromwell, who was a patient. These statues were by Cibber, the father of the English dramatist. When I was Head of Bethlem these were unearthed, and are now in the City Museum.

It was one of the sights of London, and Evelyn in his *Diary* writes: ‘After dining with Lord Halton, I stepped into Bedlam, where I saw several poor miserable creatures in chains, one of them mad with making verses.’ Pepys does not seem to have visited it himself, but refers to the young people going to Bedlam. Members of Parliament had free entry to the place, others paid one or two pence. Little change in the treatment of the insane took place till the last century, and I have in my possession chains used less than

a hundred years ago. Up till the removal of Bethlem from the City to its present site in 1815, the public were still admitted to see the patients for a fee of 2*d.*, and George Cruikshank told me that he had there studied insanity and made sketches. The present Chaplain of Bethlem has most kindly given me many interesting facts as to the treatment of the insane during the sixteenth century, which time prevents my using.

That so little progress was made in medical treatment of the insane till recently is hardly surprising. We have not reached the physiology of the brain, though our knowledge of its anatomy is now very far advanced. Yet, as has been wisely said, we are like the drivers, who know the names of the streets and their local relations, yet know nothing of the life within the houses. So we know much of the nervous system, and little of what goes on within.

I have long since pointed out that there is no entity insanity—that it is at most a negation, and a state which may depend on many causes. The brain, like other organs, has a limited power of expressing itself, and whether the brain itself is diseased, or is suffering from the bad service of one of its servants, the same symptoms will arise. And, further, there are many so-called cases of insanity depending on social misfits, for which no brain pathology will account. Splendid work is being done by our Fellows, such as Mott and Head, and I have little doubt that their work will, in good time, result in arresting or preventing many cases of insanity.

I cannot quit the subject without a reference to the splendid offer of our Fellow Dr. H. Maudsley for the foundation of a mental hospital. And in this connexion let me remark that our original benefactors have been so often commemorated that it is not necessary for me to do more than mention names. During the past year no great pecuniary benefaction has fallen to the lot of the College. Dr. Selfe Bennett presented a pastel

portrait of our former President, the late Sir Risdon Bennett. The special thanks of the College were accorded to Sir William Allchin for a gift of valuable MSS., a volume of treatises of the fifteenth century, and earlier. The College has by death lost one of its benefactors, the doctor who, in November, 1907, sent a cheque to the President for the purpose of starting a fund for entertaining or showing hospitality to those members of the College who have not the advantage of inspecting many of its valuable treasures. Dr. Coates died on March 23 last. It has always seemed to me that in referring to our benefactors we are apt to lay too much stress upon material benefits. Surely men who add lustre to the College by their works are as much benefactors as those who leave it money. And undoubtedly, from my point of view, the workers of the present generation in neurological and in mental pathology deserve to be remembered. When one thinks of the untitled but immortal Hughlings Jackson and his work, and the splendid work of men like William Gowers, Buzzard, Ferrier, Mott, Head, Rivers, and other younger men, one feels that their reputation should certainly last as long as that of those whose gifts assume a more material form.

And now I come to what I may call the real matter of my address. I have, after much consideration, determined to deal with two subjects—one cursorily, because time will not permit me to do more; the other more fully, because I feel that at the present time it is all-important it should be fairly faced.

EXPERIMENTAL PSYCHOLOGY.

The first subject that I shall refer to is experimental psychology. The general feeling, certainly among the seniors of our profession, is that experimental psychology is hardly likely to reward those who are

devoting their lives to it, and I have heard some good and thoughtful physicians express regret that men of promise were, as they thought, wasting their energies on what will be of little service either to psychology or to medicine. They look upon the two as incompatible, and consider that physics and the imponderable are not to be brought together. Yet I feel that we have no right to stop investigation because we cannot see any immediate prospect of material result, or because we cannot see the lines on which advance is to be made. Psychology, as considered from the purely introspective side, has held the field long enough, and has made comparatively little progress. Experimental neurology is advancing, and the tendency in physical and chemical sciences seems to be towards unity and simplicity. So that the belief is growing that forces such as electricity, and matters such as are called elements, are really fundamentally alike. And so I believe it will be found that the senses are fundamentally alike and comparable. Experimental psychology will have a great deal to say in proving this unity. The fact that already mathematical formulae are being applied to experiments upon the senses is an indication of the movement which is taking place. To the psychologist, consciousness or sensitiveness seems to be the basis upon which all nerve and mental reactions depend. It seems to me that it is rather like the ether of the physicist. Just as ether is the storehouse of forces, and seems ever to present fresh qualities to the investigators yet itself seems to remain incomprehensible, so the source of all mental action and reaction lies in sensitiveness and consciousness; and, equally, consciousness is now, and probably ever will be, beyond the human understanding.

We may study forces in Nature and the feeling within ourselves, but we are far from being able to connect them. The work of the experimental psychologist, which was begun on the Continent, had at

first rather the aspect of social games. The various tests of memory and of verbal associations seem trivial, yet in mind-growth and mind-decay such observations have proved of importance. Later a much more important series of observations on physical and mental reaction has taken place. The second stage almost might be said to be the stage of observing reactions. And by these means the rate of thought was gauged to a certain extent. More recently one of our Fellows, Professor Rivers of Cambridge, and Professor Myers, who has published a most valuable book on experimental psychology, have been working at the evidences of physical and mental fatigue and exhaustion ; while the work that has been done by another of our Fellows, Dr. Head, is all-important, and seems to point to the sense of touch being much more complicated than was at first supposed. And, what to my mind is more interesting, it shows that our preconceived ideas were altogether wrong. For long enough we considered heat and cold as relative terms, whereas now we know that there are definite heat spots, and that there are definite cold spots. Moreover, Dr. Head, after his autovivisection, disclosed other shades of feeling that had hitherto not been appreciated. Looking at his observations, and the remarks by Professor Myers, one could not help seeing a parallelism between the tones of music, the spectrum of colour, and the shades of feeling ; that, in fact, beyond the ordinary range of feeling there were impressions, or possibilities of impression, which we find it difficult to appreciate. It seems unlikely that we shall develop any more senses than we have at present ; but just as by scientific experiment it has been shown there are vibrations, both of sound and of light, that are not recognizable by ordinary senses, so there are possibilities of other senses of which we are at present ignorant. Experimental psychology has done, at all events, two important things : it has shown us how to measure definitely the reactions

of the senses to their surroundings, and at the same time it has shown us how readily some of the senses may be deceived, leaving us, I trust, with an open mind for things at present undefined.

The work done by Professor Rivers, partly represented in his Croonian Lectures, is evidence of a most thoroughly self-sacrificing spirit, which, to my thinking, points the way to a better understanding of drugs and their actions, so that we shall not be pouring drugs of which we know little into bodies of which we know less.

Professor Myers says that experiment in psychology is in some measure as old as Aristotle, and that experimental psychology is but one mode of studying psychological problems. Experimental psychology studies the responses of individuals to definite prescribed conditions. The experiment is modified by altering the mental attitude of the subject or the outer influences to which he is exposed. The reaction of the subject is personal, subjective—that is, feeling and expressional—generally both. It is really essential to have a second observer for the second part of the experiment. In experiments expectancy greatly affects the results of feelings, and desire, fear, or like emotions, may alter or invalidate the result. Introspection should never be omitted in a psychological experiment. It is only the possibility of giving physical expression to mental states which confers on general and experimental psychology the rank of science. This physical expression is obtained by observation of the subject and of his outward behaviour, and by the description of the subject's inner experience. No one can observe the mental states of another; they are the subject's private property. It is the object of experimental psychology to describe the complex in the terms of the simple. From one aspect a certain mixture of hydrogen and oxygen is identical with an equal mass of water. Although the hydrogen and oxygen remain undestroyed during the transfor-

mation into water, we cannot overlook the fact that important alterations have taken place in their relationship to one another; they are fused, and are no longer a mere mixture. So, too, in psychological examples several tonal sensations fuse to create a new expression of temper; but both chemistry and psychology must recognize the inexplicable nature of the fusion. However, this is more suggestive than exact, as the personality of the subject has to be added and considered. In the study of sensation experimental psychology proceeds hand in hand with the physiological; but, in regard to memory, comparison, and mental work, we are indistinctly connected with a physiological basis. It is only in comparatively simple conditions that the physiological can accurately predict what reaction will occur from a given stimulus. The living body is characterized by unknown vital activities, as well as by known mechanical activities. The variability, not only among individuals but in the same individual, is supposed to be against the existence of any science of experimental psychology; but the object is to study Nature, and the variations and properties of mind are affected by different conditions. It is the aim of all science, and the aim of experimental psychology, to analyse, as far as possible, the conditions which may be present, and to determine the result which must follow provided that these conditions exist. It would take me too long to go fully into experimental psychology, but I think it right to call definite attention to the work that is being done.

HYPNOTISM.

And now for what may be considered the dangerous part of my subject. I feel strongly that the time has now come when we must face the fact that in all directions there is a tendency towards credulity. We have witnessed the recrudescence of pilgrimages, the influence of theosophy, Christian Science, and mysticism

in general. It is time that some attempt should be made to sift the wheat from the chaff, and in a calm consideration of the facts connected with hypnotism and experimental science I believe that a real advance can be made.

I may preface my remarks in reference to hypnotism by saying that I began with doubt, passed into a stage of indifference, and now have reached the stage of hope. Hypnotism has existed and been practised under other names from the very earliest times. It seems pretty certain that the old Aesculapian temples and similar places witnessed hypnotic and suggestive influence. It is interesting, too, in relation to Harvey, to remember that the so-called hypnotic influence exercised by placing a fowl with its beak on the ground and drawing a chalk line from it, was practised in his time by a Jesuit priest. But later comparatively little progress was made. The real history of hypnotism, as understood at the present day, begins at the end of the eighteenth century, when Mesmer, in Paris, gave demonstrations of what was afterwards called mesmerism and animal magnetism. Unfortunately, he and some others who have taken up the subject of mesmerism and hypnotism have been led astray, or have added a certain amount of charlatanism to their scientific pursuits. It is quite certain that Mesmer was able to produce hypnotic results; but, not content with that, he became really a humbug, and the whole thing fell into disrepute. But it is, as I say, quite certain that although his theories were wrong, his practice was, to a certain extent, right. He believed that there was the definite transmission of a vital fluid of some kind from the mesmerizer to the subject. Some one, commenting upon his work, said that it was either fluid or fraud, and he was inclined to believe more in the latter.

The next important step in the development of hypnotism was that made by Dr. Esdaile, the East India Company's doctor, who, hearing of the experi-

ments of Mesmer, made use of mesmerism in surgical operations, and succeeded in doing a very large number of operations under mesmeric influence. So successful was he, that a hospital was founded for the treatment of his patients. But for the discovery of ether and chloroform and their effects, it is quite possible that hypnotic suggestion would have made very much greater progress than it did.

I would here recall the fact that the present is not the first Harveian Oration in which the subject of mesmerism and hypnotism has been considered. Dr. Elliotson, who was born in 1791 and died in 1868, was a Fellow of this college. He was an M.D. of Cambridge, and assistant physician to Guy's Hospital, which he left to assist in the establishment of University College Hospital. He was a wilful, headstrong, and rather eccentric man. He had a large and fashionable practice, but he took up hypnotism and phrenology rather prematurely, and without judgement. He delivered the Harveian Oration in Latin in 1846, and in it referred to mesmerism, and he was perfectly honest in his handling of the subject. It is said that, like Harvey's, the propounding of the new thing led to the ruin of his practice.

Before passing to the definite consideration of hypnotism, I would like to remind you that our late Fellow, Hack Tuke, has referred to it pretty fully in his book, *The Influence of the Mind upon the Body*; and in the *Psychological Dictionary* there are two long articles by Drs. Charcot and Gilles de la Tourette. Tuke was instrumental in having the subject considered by the Medico - Psychological Association. Little, however, came of that investigation; and I may say, in passing, that nowadays we know to a great extent the cause of the failure. It is quite certain that hypnotism can only have a limited use, and that its use is not among the actively insane. Personally, as I said before, I had been interested in the subject when, as Resident Physician

to Bethlem, I had the offer of the services of an expert hypnotist. I accepted the offer, and for some time tried the effect of hypnotic suggestion upon various forms of mental disorder. I was so dissatisfied that I gave up the experiment. Since then my successors, Dr. Percy Smith and Dr. Hyslop, have both, I believe, tried the experiment, with similar result.

Hypnotism has been looked upon with grave suspicion, both by the medical profession and by the laity; but there is no doubt that thoughtful men all over the world are recognizing that it is a force to be considered. Professor James, the American writer on psychology, writes as follows :—

There is a very distinct hypnotic state, which is a kind of border between waking and sleeping, in which the patient is kept by the gentle stimulus of talking. No true suggestibility of the hypnotic type can be attained till the trance stage is advanced. Suggestibility of this kind differs entirely from the suggestibility of normal life. It is a fact that in certain conditions of the subject suggestions operate as they do at no other time; that through them functions are affected which ordinarily elude the action of the waking will, and that usually all that happens is a condition of which no memory remains.

There is an essential difference, then, recognized by all observers, between ordinary sleep and dreaming and the hypnotic state. Other countries are investigating the matter very thoroughly; in France, Germany, Norway, Sweden, Italy, and Switzerland observations have been made and recorded establishing facts which cannot be ignored by us. There is, with all developing science, a hinterland, and most certainly, as far as philosophy and psychology are concerned, there is a very wide hinterland; and, as occurs in the material world, so in the scientific, such land is occupied in many cases under dangerous and untrustworthy conditions. And yet it is absolutely necessary that science should explore and develop this hinterland.

There, of course, are plenty of examples of what has been called psycho-therapeutic treatment. It is recognized that every successful doctor, practically every successful man, has a personal influence which cannot be weighed and measured. Professor Osler has said that faith has a great deal to do with the influence of the doctor, and his followers look upon him and his treatment as an example of the combination of faith and nuxvomica. There is a very strong conservative opposition in the medical profession, but this is no new thing, and opposition should be the very strength of life. Many results similar to those obtained by hypnotism may be attained without it; but I think those who have had the opportunity of observing will say that many such results are better obtained with hypnotism than without it. Mendel opposed it in writing, but made use of it in practice. Ewald objects to its being considered as medical treatment because quacks are hypnotists. But surely that is no real argument. Benedikt objected because of its mystery. But is not all treatment mysterious? A temporary loss of will has been looked upon as a serious danger. Surely, in the administration of anæsthetics such loss of will is more complete than under hypnosis. If there is any danger it is only like any other useful remedy: no risk, no good. Any danger that may occur is small and may be corrected. Among possible dangers it is said that a nervousness may be induced. It is quite possible that this is true in some cases, especially when handled incautiously. Hysteria and hystero-epileptic attacks are said not infrequently to have followed the use of hypnotism. Those who have practised it say that such results are very rare. From my point of view I think there is a certain amount of danger, especially in highly neurotic people, lest it should tend to the development of hallucinations of the senses. It is quite certain that a fair number of people develop delusions of persecution as the result of the study of spiritualism or occultism. It is, therefore, just as well to avoid the

use of hypnotism in highly neurotic people. It is also possible that certain people may come to like hypnotism, and to be parallels to the dram-drinkers; they like the sensation of passivity which follows hypnotic influence, and would make use of it unreasonably. It is said dullness, lassitude, and heaviness may follow, but the subjects whom I have questioned deny this. Another objection which has been raised is that the effect is so temporary that little good can be expected. This is rather an opinion of inexperience, for with experience one sees very permanent results. Dr. Sainsbury eloquently puts it thus: 'What need have we to go to hypnotism *in camera* when in the open forum, in broad daylight, amid the commonplaces of everyday life, it declares itself. For the most part we fail to realize how suggestion works in detail as well as in gross throughout the business of life. And this brings us to the point of those considerations, namely, that in every healthy art, no less than elsewhere, the ideational is a living force. Now, power is for use and abuse, and suggestion is for use and abuse—the orator to use and the demagogue to abuse. In like manner, it is for the physician to honour and the charlatan to dishonour suggestion.'

And now as to some of the established facts in relation to hypnotism. We are all familiar with the public performances of so-called hypnotism, in which persons are made rigid and their muscles are kept tense for long periods. Such long-continued strain of muscle may be maintained under hypnotic conditions without any sense of fatigue and without any subsequent pain. Again, as far as common sensation is concerned, it is usual for the public performer to induce insensibility, so that pins may be thrust into the skin without causing pain. Taste and smell may be perverted or suppressed. Sensibility, on the other hand, may be greatly increased, and it has been shown that every one of the senses, under certain conditions, may be rendered very much more acute than is normal.

The pulse may be increased, but as a rule neither pulse nor respiration is increased by simple hypnotism. When hypnotic suggestions are made that the individual is to exert himself or is to run a race, then it is said that increase both in pulse-rate and respiration may take place. It is also quite certain that hallucinations of the senses may be produced, another of the stage performances being one in which a person is made to believe himself surrounded by bees or stinging insects. Hypnosis also may produce peristalsis of the bowels, and, according to some observers, one of the most certain effects of hypnotic treatment is the regulation of the bowels. It is a common observation among them to suggest that at a fixed time the bowels shall be relieved; and, according to their reports, such action of the bowels almost invariably occurs. Besides the muscular power, the common sensibility, the special sensibility, the action on heart, on lungs, and on bowels, there are the psychical symptoms to be considered. Memory is said to be markedly improved, that is, increased, and that many forgotten details of earlier years are recalled. On the other hand, by suggestion complete forgetfulness may take place. It is noteworthy that in the various stages of hypnotism there are different degrees or states of memory. In the slight or suggestive stage, the memory for recent events—for passing events, in fact—may persist, whereas in the second and third stages the memory may be absent completely. It is also said that there may be a kind of double consciousness, so that in a person whose waking memory exists and persists the memory of one period of hypnotism is linked on to that of the past. But the whole condition of memory in connexion with hypnosis is a difficult one to follow.

One of the most important methods of hypnotic treatment, and the one chiefly in vogue now, is what has been called post-hypnotic suggestion. The patient is partly hypnotized, and then impressions are made

upon him which reappear; but for complete success of post-hypnotic suggestion more profound hypnosis is required, so that, for instance, he is told that a certain thing will happen at a certain time, or he will be told to do a certain thing under certain conditions. He may be recalled to consciousness without being informed as to what he is to do later, and then he will proceed to do what has been suggested to him in his hypnotic state without having any memory or recollection of the instruction given. Some of the examples that are given—and given on good authority—are so extraordinary that one is obliged to say that, given their truth, they are beyond our human comprehension. The sense of time, for instance, is one that appears to be fairly well understood, but beyond the ordinary normal it is the experience of very many, including myself, that a determination to wake at a certain time will be followed by awaking at that time. Or if by chance I am called at an unusual or unexpected hour, say at 3 or 4 o'clock in the morning for some days, I and those like myself will awake exactly at the same hour on succeeding days, regardless of the time of going to bed. The exactness with which that awakening takes place has astonished me very much, so that I have found myself as correct as the clock. In post-hypnotic suggestion it has been pointed out that with some people one has only to suggest, while they are in the hypnotic stage, that in so many thousand minutes, or in so many hours and minutes, they are to do a certain thing, and that act will be performed within quite a reasonable time of that appointed. Some cases are so astonishing that one hesitates almost to give them. This is one of Bramwell's: A woman is told that in so many thousand minutes she is to write her name, the hour of the day, and the date. She is not very well educated, and would have considerable difficulty in working out the number of hours and minutes; and yet at the time appointed she writes

down her name and puts the date, and is surprised to find what she has done. I have only reports of such experience, I have never had the opportunity of seeing it for myself.

These, then, are some of the very definite physiological symptoms produced by hypnotism.

The next and most important part of this subject is the relationship between hypnotism and medical and surgical treatment. It has been looked upon by some as itself a morbid mental condition; and it was supposed that only those who were suffering from hysteria and allied neuroses would be affected by it. It was thought, moreover, that such people were the very ones who ought not to be subjected to its influence. However, it has now been found, by long experience, that there are certain forms of disorder that are better treated by hypnotism than by anything else. It is quite certain that hypnotism alone may not be all that is required, and there, I think, a mistake is frequently made. It is thought that it must be hypnotism and nothing else. But one's experience is that surroundings, and general conditions, are as important for the treatment as the hypnotism itself. As I have already said, there are many nervous cases which might be cured without hypnotism, but such cases, in many instances, would be cured more quickly and more satisfactorily by the use of hypnotism. It is certainly contra-indicated in the very highly neurotic. I think those coming of very insane stock should rarely be subjected to its influence. Those who are actually insane are rarely, if ever, influenced by it. Epileptics, as a rule, do not benefit in one way or another. To put it shortly, nervous disorders that do not depend upon organic brain disease, those mental disorders that are purely functional, and such as do not cross the insane border-line, may be benefited. It has been said against hypnotism that it treats symptoms and does not treat the disease. But it seems to me pretty certain that in many cases if you

can alleviate the symptoms you go a long way to cure the disease. In fact, in many cases the symptom is the most serious question. If, for instance, pain is disturbing digestion, rest, and general mental capacity, the relief of pain places the patient on an altogether different footing to that on which he was before. In the same way with sleeplessness. If you can relieve sleeplessness, in many cases the fundamental cause of that sleeplessness may be better treated. But as long as the sleeplessness goes on you are unable to attack the real cause. I would enumerate, therefore, some of the more marked conditions that may be relieved. Ramón y Cajal, who may be taken as a calm observer and a learned pathologist, describes delivery as occurring under hypnotic suggestion without pain or trouble. Several other writers have described labour carried through perfectly satisfactorily during hypnosis. Voisin refers to cases in which prolonged sleep in cases of acute mental disorder of a maniacal type has been followed by recovery; and I do feel very keenly that an enormous gain would follow in a large number of acute disorders, both nervous and physical, if by hypnosis one could induce prolonged sleep. Surely in some of the fevers convalescence would be much more satisfactory if a period of prolonged sleep could be induced without the aid of drugs. Functional disorders, such as stammering, the so-called muscular and nervous tics, have been very frequently relieved and cured. Enuresis has been treated frequently with great success, and chronic constipation, as I say, has also frequently been relieved. The best cases that have come under my own observation have been those associated with alcoholism or drug-taking. The result has in many cases been astonishing. Many will say, doubtless, that the Salvation Army and other emotional agencies have saved many drunkards. But the thorough inebriate is rarely, if ever, saved by the ordinary means. Probably all of us have experience of the result of retreats; temporary relief

occurs, and occasionally permanent cure, but in a very large majority of cases there are relapses. It is somewhat difficult to speak clearly on this matter, for though I have had the opportunity of seeing drinkers and drug-takers who have been well for considerable periods, yet there is always the possibility of a relapse. But the quickness with which the drink or the drug habit is overcome is very surprising. I have known patients who have for years been intemperate, and who, after the first hypnotic treatment, have lost the desire for drink. In treating these cases there are two or three different methods. One is a kind of moral influence, getting the patient into the suggestible stage, and then pointing out the disadvantages of drink. Another is post-hypnotic suggestion that drink is disagreeable. I have seen patients who have been cured by both methods. Next to these cases, those of moral perversion are among the most interesting, and are certainly frequently benefited. Personally, I am not able to speak so fully of them, but the general experience is that, besides the drinkers, the morally depraved, if they are not absolutely weak-minded, may be greatly benefited by hypnotic treatment. Suggestion in these cases may be called moral massage, and, just as muscular power may be restored by passive stimulation, so mental power may be recovered by repeated gentle stimulation. The most marked successes have been with some of these cases, but I fear many failures have also to be recorded; but this only means that hypnotism has failed in cases where every other form of treatment has also failed.

The production of sleep and the removal of pain are, of course, important, but still more important and most obscure is the increased susceptibility to normal moral influences produced by hypnotism. It must be recognized that when the subject does not accept freely the treatment, no therapeutic result will follow. As I have said, hypnotism is useful often in very different morbid states, relieving symptoms, whether due to simple or

to organic causes. The most suitable maladies for hypnotic treatment, then, are the neuroses—nervous complaints in which no anatomical cause is demonstrable. This list, of course, is very long, including what I have already referred to—many aches and pains, skin irritability, spasms, tremors, and the like. Hysterical spasms and palsies are frequently relieved. It is, of course, to be remembered that in treating a patient suffering from moral disorder a physician should never do or say anything in a hypnosis which the patient would not assent to while in waking moments; that is, on no consideration must advantage be taken of the semi-conscious condition. It may be well, however, here to mention the experience of all who have been working along these lines—that it is impossible to influence a person to do what is absolutely alien to his training and inheritance. Take such an example as this: It was suggested that a lady should put out her tongue and make a rude remark to the physician. She fully inclined to do something of the sort, but did not. And experiments were tried such as inducing people in hypnotic conditions to go through what might be called a criminal act, such as stealing or assaulting some supposed enemy. Such things can be done as play-acting, but it certainly has never been shown that any criminal act has been done under hypnotic suggestion. Even in organic disease, such as tabes and apoplectic paralysis, temporary improvement seems to result, and in some forms of obstinate vomiting, especially that associated with nervous anorexia, hypnotism is very beneficial.

From the medical let me pass for a moment to the surgical side. As early as 1821 Récamier performed operations in mesmeric sleep, and, as I have already said, in 1840 Esdaile did many operations in Calcutta; while the present professors of hypnotism report many cases in which slight operations, such as the removal of teeth and the like, have been done. Let

me now submit to you a few examples of treatment by hypnotic suggestion.

CASE I. W—A—, male, married, with healthy family, father had senile dementia, very strong, active, energetic and successful, moderate with alcohol but a heavy smoker. Seen by me April, 1909; had been under English doctors in the East for several months. Before the illness there was a severe and exhausting moral strain which occurred in August, 1908, and lasted for ten days. There was no immediate sign of the effects, but ten days later he had a dead feeling at base of nose and a feeling like that of a stiff neck in occipital region, lassitude, 'soreness at base of spine,' occasional pain in right leg, a peculiar cough, a feeling as being physically sick from some mental sensation, sudden desire to micturate, lack of power of attention, especial difficulty in writing. Mentally the first symptoms were those of unreality of things; this was worse later in the day. Great depression, and fear of insanity. There were recurring waves of depression. Sleep at first partial was later disturbed, especially when going to sleep by a feeling of vertigo. On waking there is great confusion of ideas. Doubt, weakness of will, and overpowering dread of insanity represented his condition in March of this year. He was absent-minded, wanting in receptivity, no defect of memory, though there was difficulty at times in locating events so that, though they were fully recalled, their relationship was misplaced.

There was a tendency to apply to himself things which he read in papers or books. At times loss of higher control and hysterical outbursts. When seen by me he was as described above, but his physical strength, associated with his nervous weakness, caused me anxiety.

He was seen by a medical man experienced in tropical disorders and by two leading physicians in London. He was encouraged to lead an active out-of-door life and to live simply. Some weeks of this treatment found him more weak and emotional and fully persuaded that he ought to be sent to an asylum.

I recommended him to see Dr. Bramwell, and after some hesitation he went into a home where he was treated by hypnotic suggestion. In this he never lost memory or consciousness, but from the first treatment he began to

gain power and to lose his dreads, and within a few weeks he was in perfect health.

Having had the opportunity of watching this case from the first, I am able to speak definitely about the good effect of the simple suggestion treatment. I saw him in October before his return to the East in perfect health.

CASE 2. Mrs. —, aged 51, September 30, 1903. For two years she had been profoundly depressed, had lost all interest in life, and felt that death would be a relief. Indigestion, marked emaciation, &c. Since early childhood she had suffered from muscular tremor in the arms and hands. She was unable to pass things at table, and, when in company, was often unable to lift a cup or glass to her lips. Owing to this she would often do without wine, tea, or coffee. Eight months previously she began to have noises in the head. These soon became constant, frequently caused insomnia, and were associated with great mental distress.

The patient had been married twice, and had recently lost her second husband. She began to have the delusion that her first husband's name appeared on her visiting card. She tried to reason herself out of this, but the obsession returned every time she made a call. She would draw a card out of her case without looking at it, hand it to the servant, and then shake with terror. She had consulted various physicians and surgeons, more especially in reference to the noises in the head, but had obtained no relief, and was finally told that the condition was incurable. After the first treatment by suggestion the tinnitus aurium ceased; it returned slightly at the periods, but disappeared completely two months later. The muscular tremor and the obsession disappeared after the third treatment. The patient rapidly put on flesh, gained in strength, and all the other nervous symptoms quickly passed away. Since then, up to when I saw her, May, 1909, there has been no relapse. The patient was well mentally and physically, and enjoying life keenly.

During treatment the patient never passed into any condition even superficially resembling sleep.

CASE 3. 'Grande Hystérie,' No. , Mr. —, aged 23, was sent to me by Dr. Kerr. His mother was in bad health when he was born; as an infant he had convulsions and vomiting, and also neurasthenia for eight months at the age of 18. He studied in Paris, took a good degree, and afterwards went to Cambridge, where he devoted himself to higher mathematics and advanced physics. In August, 1907, after over-work and emotional shock, he began to have attacks of urgent vomiting every day or two with constant headaches and much prostration. In September he had no vomiting and felt better. He went to Italy in October, and commenced to have muscular spasms in the train, after which one side of the face and body became paralysed. Then the vomiting recommenced and the paralysis disappeared. He returned to Paris in November ill and vomiting, and on the 20th of that month, the anniversary of his mother's death, his father found him in bed vomiting, unable to speak, and ignorant of what was taking place around him. This attack twice recurred with four days' interval, and a specialist diagnosed tubercular meningitis, and prophesied that he would be dead in a few days. December was a bad month; he had attacks of vomiting every other day, particularly during the night. Then, hearing that some of his friends were in Switzerland, he insisted on being taken there. He started from Paris by night in a sleeper; half an hour later he commenced to have delusions and to talk nonsense with imaginary persons. The journey was completed in a sledge, and he became quite maniacal and had to be held down to prevent him from jumping out. Soon after he arrived at the hotel he was running about the corridor in his nightshirt. Dr. Kerr, who happened to be staying at the hotel, remained with him most of the night, but he never slept. Next day the local doctor and a male nurse were called in, but were unable to manage him. He knocked his head against the walls, smashed things, kicked the glass out of the window, and attempted to jump from it. He attacked the local doctor many times. He attempted to *ju jitsu* Dr. Kerr, and badly twisted his hand. Three days later he was quite reasonable, but had general muscular tremor, a very ataxic gait, and frequent vomiting. From that date until May, 1908, he was sometimes better, sometimes worse. He then

became very ill, and had incessant vomiting, muscular tremor, and a temperature of 103° . A consultation was held and the possibility of cerebral tumour discussed.

I first saw the patient on June 1, 1908. He was much emaciated, profoundly depressed, and suffered from vomiting, constipation, and insomnia. His gait, which had been described as markedly ataxic, more closely resembled that of a drunken man, and he could not walk across the room without assistance.

The vomiting ceased after the first treatment, and from that day the patient made a steady and continuous recovery. During August he led an active, open-air life, bathing, boating, sea-fishing, &c. Between July 20 and October 5, 1908, he gained eighteen pounds in weight. During treatment he never became drowsy; he simply rested quietly and repeated mentally verses from his favourite poets.

The following are extracts from recent letters received from the patient:—

January 5, 1909. 'We tobogganed down sheer precipices in a snowstorm, and were nearly killed and suffocated by the speed—about forty miles an hour down a slope much steeper than the roof of a house—and here I am fitter than ever.'

January 23, 1909. 'I keep as fit as a fiddle, I am so steady of foot that I can climb the most precipitous places quite surely.'

February 9, 1909. 'To give you an idea of my state of health, hearken to this: last week we set out on a two days' walk and covered sixteen miles the first day. On the second we started out at seven a.m., climbed a mountain some 5,000 feet high, trudging through the snow for hours. The snow was merely very exhausting, but I have been doing some quite breathless work (i. e. climbs) on rock. Not so bad when you remember at what pains I was to reach that arm-chair of yours without falling.'

Recovery confirmed by later reports.

I saw and examined this patient in September, 1909, and found him perfectly well.

CASE 4. Miss —, aged 19, June, 1900. A tall, well-developed Italian girl, educated and highly intelligent. Mother suffered from hysteria. The patient had her first hysterical attack in November, 1894, after over-

working for an examination. This was preceded by headaches and boisterous laughter: then muscular twitchings, at first confined to the shoulders, appeared. Soon these movements became more violent and generalized, and alternated with various muscular contractures: the latter sometimes affected the jaws, and the teeth became firmly clenched. This condition lasted till May, 1895, then disappeared after a short hypnotic treatment.

In July, 1895, clonic spasms reappeared during sleep. In September, 1896, she came to England to teach in a High School, and shortly afterwards began to have spasms in the daytime. At first these affected the left side only, then practically all the voluntary muscles. From the later date until December, 1899, the patient was hypnotized at regular intervals. At first the attacks ceased after one or two sittings, but the longest remission was only eleven weeks, and they frequently returned at the end of a few days. By degrees the treatment lost its influence: the spasms became more violent and severe, a contracture of the left leg appeared, and the patient could only limp a few steps. She suffered much from headache, was extremely emotional, often depressed, had morbid ideas and frequent attacks of hysterical laughter and weeping.

In December, 1899, hypnotic treatment was discontinued, and the patient consulted a well-known neurologist. She was placed in a medical man's house; but, as her condition grew worse, she was removed in two months, and admitted as a contributing patient to the National Hospital, Queen's Square, Bloomsbury. There she was treated by isolation, rest in bed, and hot baths. Blisters were also applied in order to render the movements painful. Later, large doses of hyoscine, chloral, bromide, &c., were given, and the patient kept in a more or less narcotized condition for weeks. Despite this the twitchings, convulsions, and contracture of the leg increased in severity, and she was discharged on June 18, 1900, much worse than when she entered.

She was then brought to me by Dr. Sainsbury, and I began treatment by suggestion the following day. At that time, except during sleep, the patient had constant jerking movements of the left side, involving the face, arm, leg, and trunk, while the head was drawn violently to the left. She had also frequent attacks—

sometimes ten or twelve a day—of the true Salpêtrière type of *grande hystérie*. After violent generalized convulsions, lasting several minutes, the head was drawn backwards towards the heels (*arc de cercle*), and the face became cyanosed; then, after much abdominal gurgling, the spasm relaxed, the attack ceased, and the unilateral muscular movements recommenced. She never lost consciousness, and the seizures were not followed by amnesia; there were no signs of organic disease.

For the first fortnight every time I treated the patient she had a convulsive attack, but, despite this, I made suggestions in the usual way. She then gradually became quieter, and a week later the morbid symptoms disappeared; treatment, however, was continued until July 31; but neither during that time nor afterwards were any drugs given.

On September 20, 1900, she returned to work, and from then up to the last report (March, 1909) there had been no relapse, despite the fact that she was always overworked.

Seen by me October, 1909; found to be in perfect health.

That people should be relieved from mental obsessions is to me still more interesting and still more difficult to explain, and I speak about them with the more diffidence as I have had so far little experience of them. But the reports are so clear and so matter-of-fact that I have personally no doubt that many patients recover completely who have suffered from morbid dreads, 'doubts,' from fear of poisons, from fear of contact, in fact, from what have been called the phobias of all kinds. Some of them lose them very rapidly, almost instantaneously, but in other cases they seem to be slowly relieved.

I submit, then, that the investigation of hypnotism is a thing that should not be ignored in this country. When other nations are carefully investigating the physiology and the therapeutic value of this potent influence, it is certainly rather a pity that England should be in the background.

Wishing to follow our great master in not accepting

anything without personal investigation, I took advantage of the opportunity offered by Dr. Wright to test some of the points of most importance to which I have referred. A gentleman, an engineer, who had been relieved by treatment by Dr. Wright, was willing to allow him to demonstrate the various stages of hypnotism and their effects. The gentleman is young, very strong, healthy, and free from neuroses. He is in very marked *rappport* with Dr. Wright, but with no other hypnotist.

He was asked to sit down and talk quietly about his relationship to hypnotism, then he was told to go to sleep; a few passes being made over his head, he slowly closed his eyes, and in less than a minute he was sleeping placidly. By the gentle stroking of his left arm this was rendered inflexible; the pulse was in no way affected; pupils were equal, but rather larger than before he slept, and were sluggish. He was slowly aroused (it being well always to recall the subject slowly). After a talk on general matters he stated that he had no sense of fatigue in the arm or any recollection of anything said and done during the period of hypnosis. He was again in a similar way sent to sleep. It was then suggested that at the end of seven minutes he should lose all power and sensibility in his right side. He was roused, given a cigarette, which he smoked while he talked, having no knowledge of the suggestion which had been made. About five minutes after he had been roused his right arm fell useless by his side, he passing at the same time into a partial stage of hypnosis. This is common when a post-hypnotic suggestion is being carried out. The whole of the right side, including the face, was insensitive; the pupils were smaller and inactive. He was again slowly aroused, and resumed smoking, having no feeling of oppression or recollection of anything which had been said or done. He was later again hypnotized, and in that condition he was asked what had been done formerly. After some hesitation he in part recalled the facts.

It is interesting to note that though constantly the acts performed during hypnosis are not recalled when awake, they are fully remembered on a second hypnosis. We tested his emotional side by getting him to recall scenes in a comic opera, at which he heartily laughed, but of which he had no knowledge on waking. While unconscious it was suggested that when he awoke he should remark upon a strong odour of violets. He was awakened and offered a cigarette ; but, looking about the room, he asked whence the strong smell of violets came.

I inquired as to the revival of long-past impressions, and it seems that occurrences which took place in infancy before his present memory existed had been revived and verified, but still more interesting was his experience in reference to a mathematical formula which he had forgotten. Being hypnotized he dictated it, and though when once more awake he did not remember it, when shown what he had just dictated he recognized it as the lost formula. This, of course, is in a way parallel to the solution of difficult problems during sleep.

One of our judges told me that on two occasions in his professional life he had in sleep been able to arrange difficult legal problems which seemed insoluble during his waking life.

I feel that in passing to the subjects of experimental psychology, and more particularly to hypnotism, I am on what might be called dangerous ground. Many of my colleagues, I know, shake their heads and doubt the utility of hypnotism, and the fitness for the subject being seriously considered. But one of the great pieces of advice which Harvey gave was that we were to follow truth without fear as to whither it might lead. I am doing my best to direct the line of advance by means of observation, and it seems more than likely that the two dissimilar forces as they appear at present—experimental psychology and hypnotism—may, after all, unite in a scientific advance.

And now, gentlemen, it is time for me to bring this

my Oration to a conclusion. No one can be more conscious of its shortcomings than myself, but I have done my best to present to you a brief survey of the great Harvey and his environment, and I have naturally dealt with the subject from the point of view of my own special line of work. Let me take leave of him with a few final words of reverence and appreciation.

Amongst the most prominent characteristics of Harvey was the singleness of purpose of his life. He had formed definite aims, or, rather, he determined to look for himself into things without fear or prejudice. And his power for steady scientific work did not prevent him from entering into practical professional duties of all kinds. He was socially acceptable alike in England and in Italy; but, with all this, he seems to have disregarded the great men of his time. Shakespeare was living and writing and acting; Milton was in full evidence by his politics and his poetry; Chancellor Bacon was known, but was not appreciated; and so with many others of the very distinguished men of his time. Science was his mistress; literature, as such, did not appeal to him. Though the exact sciences, like mathematics, formed an interest up to the end of his life, he still followed the anatomical and the physiological rather than the mathematical sciences. Religion did not seem to take a prominent hold of his character, and, though living in a most stormy political period, he seemed to be little moved by the tragic events through which he passed. He was a man of kindly family affection, yet his one object—the pursuit of truth—so dominated him that little else appears upon the horizon.

Let me conclude with his own words: 'I therefore whisper in your ear, friendly hearer, and recommend you to weigh carefully in the balance the exact expression of all that I have delivered in this my exercise.'

